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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,937	06/04/2002	Tetsuyuki Kurata	2418.43US01	3017

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EXAMINER

STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/009,937

Applicant(s)

KURATA ET AL.

Examiner

Michael P. Stafira

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-12, 16-29, 32 and 37 is/are rejected.
- 7) ☒ Claim(s) 5-7, 13-15, 30, 31, 33-36, 38 and 39 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claim 5 is objected to because of the following informalities: In claim 5, after “determined average title” should be --determined average tilt--. Appropriate correction is required. Applicant is advised to further review the amended claims for grammar errors such as spelling and spacing.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohsaki et al. ('352).

Claim 1

Ohsaki et al. ('352) discloses a method of measuring transmitted light intensity of light that has come from the light incident side for a plurality of light incident angles (See Fig. 1, Ref. 5) by rotating the element about an axis perpendicular to the direction of transmitted light towards the element (See Abstract); analyzing dependence (Fig. 1, Ref. 3) of the measured

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transmitted light intensity for the plurality of light incident angles; and determining the pretilt angle of the element based upon the analysis results (Col. 8, lines 26-39).

Claim 2

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads on applicants limitations).

Claim 3

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352) discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 4

The reference of Ohsaki et al. ('352) further discloses measuring the transmitted light intensity for the plurality of light incident angles, monochromatic light is incident from the light incident side (Col. 10, lines 57-64).

Claim 8

Ohsaki et al. ('352) discloses measuring transmitted light intensity of light from the light incident side for a plurality of light incident angles by rotating the element (Fig. 1, Ref. 5) about an axis perpendicular to the direction of transmitted light towards the element (Fig. 1, Ref. 5) and at a plurality of optical element arrangements for each light incident angle (See Abstract); analyzing dependence (Fig. 1, Ref. 3) of the measured transmitted light intensity for the plurality

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of light incident angles; and determining the pretilt angle of the element based upon the analysis results (Col. 8, lines 26-39).

Claim 9

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads on applicants limitations).

Claim 10

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352) discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 11

The reference of Ohsaki et al. ('352) further discloses measuring the transmitted light intensity for the plurality of light incident angles monochromatic light is incident from the light incident side (Col. 10, lines 57-64).

Claim 12

Ohsaki et al. ('352) further discloses detecting the pretilt for the retardation which is based on the stokes parameter of the plurality of incident angles. (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification

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on page 18, paragraph 2, therefore the reference of Ohsaki et al. ('352) determines the pretilt angle of the optical element.)

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 16-29,32,37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohsaki et al. ('352) in view of Hirose ('208).

Claim 16

Ohsaki et al. ('352) discloses a light sources (Fig. 1, Ref. 1) a polarizer (Fig. 1, Ref. 2); an element (Fig. 1, Ref. 5) in which the direction of orientation of molecules is twisted from a light incident side to a light outgoing side (Col. 10, lines 1-55); an analyzer (Fig. 1, Ref. 3) and a photodetector (Fig. 1, Ref. 4).

Ohsaki et al. ('352) substantially teaches the claimed invention except that it does not show a processing device for processing output signals from the photodetector. Hirose ('208) shows that it is known to provide a processing device for processing output signals from the photodetector (Fig. 1, Ref. 8; Col. 5, lines 13-17) for an apparatus for measuring the pretilt of a liquid crystal. It would have been obvious to combine the device of Ohsaki et al. ('352) with the processing device of Hirose ('208) for the purpose of providing a device, which allows

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calculations of output signals at the measurement area, therefore providing real-time analysis of the output data.

The reference of Ohsaki et al. ('352) further discloses determining the dependence of transmitted light intensity on a light incident angle based upon the transmitted light intensities for a plurality of light incident angles that were output from the photodetector; wherein a plurality of light incident angles are determined by rotating the element about an axis perpendicular to the direction of light from the light sources in which light is transmitted in the direction towards the element and detects the pretilt-angle of the element based upon the analysis results (Col. 11, lines 24-68).

Claim 17

Ohsaki et al. ('352) further discloses a quarter-wave plate (Fig.6, Ref. 9) is provided between the element (Fig.6, Ref. 5) and the analyzer (Fig. 6, Ref. 3).

Claim 18

Ohsaki et al. ('352) further discloses determining the dependence of the transmitted light intensity on the light incident angle based upon the transmitted light intensities for a plurality of optical elements arrangements for each of the plurality of light incident angles that are output from the photodetector, and detects the pretilt angle of the element based upon the analysis results (Col. 11, lines 24-68).

Claim 19

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

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in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads on applicants limitations).

Claim 20

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352) discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 21

The reference of Ohsaki et al. ('352) further discloses a light source emitting monochromatic light or a converter for converting the light emitted by a light source into monochromatic light (Col. 10, lines 57-64).

Claim 22

Ohsaki et al. ('352) further discloses determining the dependence of the transmitted light intensity on the light incident angle based upon the transmitted light intensities for a plurality of optical elements arrangements for each of the plurality of light incident angles that are output from the photodetector, and detects the pretilt angle of the element based upon the analysis results (Col. 11, lines 24-68).

Claim 23

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads on applicants limitations).

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Claim 24

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352) discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 25

The reference of Ohsaki et al. ('352) further discloses a light source emitting monochromatic light or a converter for converting the light emitted by a light source into monochromatic light (Col. 10, lines 57-64).

Claim 26

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads on applicants limitations).

Claim 27

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352) discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 28

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

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in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads on applicants limitations).

Claim 29

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352) discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 32

Ohsaki et al. ('352) further discloses detecting the pretilt for the retardation which is based on the stokes parameter of the plurality of incident angles. (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2, therefore the reference of Ohsaki et al. ('352) determines the pretilt angle of the optical element.)

Claim 37

Ohsaki et al. ('352) further discloses detecting the pretilt for the retardation which is based on the stokes parameter of the plurality of incident angles. (The rotation of element (5) in Ohsaki et al. ('352) produces a retardation of the angles of incident light and discloses all the optical elements needed to calculate the stokes parameter as disclosed in applicants specification on page 18, paragraph 2, therefore the reference of Ohsaki et al. ('352) determines the pretilt angle of the optical element.)

Allowable Subject Matter

5. Claims 5-7,13-15,30,31,33-36,38,39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

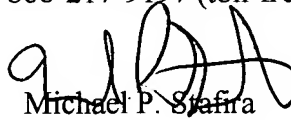
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michael P. Stefira
Primary Examiner
Art Unit 2877

April 4, 2004